

PLANTAIN PRODUCTION IN ONDO STATE, NIGERIA: THE STATE OF THE ARTS: 2006/2007

J.O. Bifarin¹, and J.A. Folayan²

¹Federal College of Agriculture, Akure, Ondo State. ²Federal University of Technology, Akure. Ondo State.

ABSTRACT

This study examined the status of plantain production in Ondo State being one of the major producer states in Nigeria. The list of all plantain producers was obtained from six purposively selected L.G.As based on intensity of plantain production and 50% of them were sampled making a total of 276 respondents. Data were collected on socio- economic and demographic variables and they were analysed using descriptive statistics. It was established among others that; plantain producers were ageing, low yield per hectare at 3.28 tonnes, mean expenses per hectare and return to management per hectare was N5,109.00 and N7,918.00 respectively. It was therefore concluded that plantain cultivation can be profitable hence given its' implications for sustainable agricultural systems, potent policies must be deplored to promote its production.

KEYWORDS: Yield, Expenses, Sustainability, Returns, Maintenance, Profitability.

INTRODUCTION

Banana and plantain (*Musa spp*) are important food crops in sub-sahara Africa, providing more than 25% carbohydrate and 10% calorie intake for approximately 70 million people in the region. "It is a key component of sustainable agricultural system in densely populated forest zones" (Schill *et al*, 1995). Marriot and Lacaster (1993) claimed that the cost of production of plantain in terms of cost per hectare, per tonne and per unit of food energy is the lowest compared with other crops grown in the traditional agricultural systems and plantain had once been reported to have the second highest gross margin/man-day per hectare of N7.225 after that of sweet potato of N7.652 (Federal Ministry of Agriculture and Natural Resources, 1974). Furthermore, the demand for plantain has once been said to rise with the improvement in family income among the urban dwellers (Ndubizu, 1979).

The production of plantain has many employment potentials not only to the farmers but also to those who market it in processed forms. For example, it is a source of employment for those who hawk it as "dodo", and for those who process and market it in form of "chips". It generates employment to the roadside women who roast it into "boli". Plantain is fried into the popular dish "dodo" which is common in most catering establishments in Nigeria. It is pounded into "fufu" and used in making porridge; it is used in brewing and for making flour. Ripe plantain can be flaked and sun-dried for consumption in lean periods, could be used as snacks or crushed and cooked with beans. It is surprising that despite all these attributes of the plantain, many policy makers in Nigeria have neglected it or treated it with indifference. For example, each of the national development plans in Nigeria had emphasized cassava, yam, maize, rice, potatoes and legumes, beans, millet, sorghum and soya beans; neglecting plantain (The Federal Government of Nigeria, 1962, 1970, 1975, 1981), and the rising trend in retail prices of plantain over time is an indication of rising demand-supply gap of the product (Bifarin, 2005).

The situations described above underscored the need to examine the state of the arts in the plantain production system in Ondo State, Nigeria. The state being one of the major producers of plantain in Nigeria.

Research Methodology

Study area

The study area is Ondo State, Nigeria. The state is made up of 18 Local Government Areas (LGAs). The state is one of the major agricultural producers in Nigeria because of the vibrant and favourable climate.

Sampling technique and data collection

A multistage sampling technique was employed. Six LGAs were purposively selected based on the intensity of plantain production. The selected LGAs are Odigbo, Irele, Akure North, Ondo West, Idanre and Ifedore. The list of plantain farmers in each selected LGA was collected, 50% of the farmers were chosen using simple random

sampling technique and a total of 276 farmers were interviewed in all. The questionnaires for the study were drawn and pre-tested.

The questionnaire sought information on variables such as demographic (age, years of experience in the enterprise, size of farm), socio-economic (yield per hectare, problem of thieves and pilferage) and cost tracing (transportation, labour, equipment, proportion of plantain sold, volume of sales per annum, inputs and their costs)

Estimations

The data collected were used to estimate the total expense for establishment of plantain and the total expense for development. Annual expenses were also derived for each of maintenance, and harvesting. From all the estimates were derived the total expense incurred per farmer per hectare of land and the total cost of producing one tonne of plantain. Other estimates included that of gross revenue from plantain, and return to management obtained by the subtraction of the total expenses and the rent of land, i.e. N3,000.00 per hectare, from the total revenue.

Analysis

Descriptive statistics of the data obtained were derived and some relationships involving age of farm and maintenance expense per ha; and farm size and total expense per ha were derived.

RESULTS AND DISCUSSION

Age of Farmers

The age bracket with the highest population distribution is the 41-50.99 bracket which constitute 38.6% of the farmers (Table 1). The mean age is 51 and 46.2% of the farmers are above this age. These findings suggest that the farmers are ageing; a situation that could result in the reduction of the available energy and in the efficiency of farmers supervising their farming operations. The government and the private sector should therefore device attractive measures that would encourage the youth to take up farming, especially plantain production.

Size of Farms

The farm size range is 0.5-17.0 hectares, and about 57% of the farmers had farms less than 5.34 ha (see Table 2). The arithmetic mean is 5.34 hectares which compares favourably with the arithmetic mean value of 4.5 hectares quoted as farmers view of a medium farm. The representative plantain producer could therefore be described as medium scale. The extension implication of the above suggests that farmers should be encouraged to set up farms not less than 4.5 hectares, and that the extension methods to adopt in the system should focus at this farm size and below.

Years in Business as Plantain Farmers

The farmers who stayed longest in the business started 40 years ago while the youngest entrant into the industry entered only a year ago. The group 11-15 years in plantain growing recorded the highest percentage of 42.2%, closely followed by the group 1-5 years. The arithmetic mean of year in business is 18 years, which happens to be higher than 10 years mean value obtained by Adeyemi (1989) in her studies of economics of plantain production in Ifedore Local Government Area of Ondo State.

These findings may suggest that some farmers who have been in the business for quite sometime (up to 18 years) could be used as an engine of plantain growth and development in the state.

Yield of Plantain in Tonnes/Hectare/Year

Field yield range is from 1.13 to 31.2 tonnes with the arithmetic mean yield of 3.28 tonnes (Table 5). The average bunch weighed 7.52kg. Even though the concept of yield is a measure of technical efficiency, it might be erroneous to infer that farmers who had the highest yield were more operationally efficient than those with lower yields.

Volume Marketed per Year

About 70% of the total harvest was marketed per year; ten percent was consumed within the farming system; and the remaining lost to pest damage. The quantity marketed depends on the number of bunches harvested by farmers. In

view of the scarcity of hired labour and high cost of same, the farmers often than not, harvested the amount that these constraints imposed.

Replanting Age for a Plantain Establishment

A plantain establishment is reported to be infested after the third year of harvest and thereafter yield falls (Adeyemi, 1989). Table 6 shows that 46.2% of the farmers claimed that the replanting age for their plantain farm is six years. The mean age for replanting as estimated from the study is approximately 5 years. The usual practice is to remove old stems while new suckers are planted in the avenues which were before the space between consecutive plantain stools. This can be done either manually or by using chemicals. These findings suggest that even though farmers may be aware that yield falls after 3 years; and hence the need for yield improvement. They may decide to defer the practice in order to extend their period of earnings.

Problems faced by the Plantain Farmers

Problems faced by plantain farmers in decreasing order of severity were transportation problem (lack of good roads and vehicle, high cost of transportation), high attack of pests and diseases (banana stem borers nematode and black sigatoka disease) with their having no knowledge of how to control pests and diseases in the face of high cost of chemicals, and high cost of labour. Other problems of less severity are low access to credit, poor storage, technology and problems of land tenure.

Recommended Labour Rates and the Observed Rates from the Findings

The details in respect of the above are contained in Table 8. A lot of variations existed between the recommended labour rates and the rates observed from the findings. These findings indicate that there is still some wide communication gap between research and the farmers, and there is still that need to study farmers' indigenous knowledge and the rationale for such practices.

Total Expenses Per Hectare

Total expenses as considered here include all expenses incurred on establishment, maintenance and harvesting one hectare of plantain farm.

This variable ranged between N1,428.38 and N18,347.53. The arithmetic mean is N5,108.78 (Table 11)

Total Cost Per Tonne

The statistics of total cost per tonne of plantain sold (ATC) excluding returns to management from one tonne are also displayed in Table 11. ATC is the only indicator of operational efficiency among all the statistics hitherto described. The maximum cost per tonne obtained was N19,140.00 while the minimum was N696.00. The arithmetic mean value was N2,690.16.

Total Return Per Hectare of Plantain Farm

The maximum value obtained was N390,000.00 while the minimum was N14,125.00. The arithmetic mean value was N41,000.00 (Table 11).

Returns to Management Per Hectare

The statistics of returns to management per hectare are also contained in Table 12. An analysis of the Table showed that the farmers with the maximum value had N109,138.58, and the minimum was a negative of N13,202.24. One feature of these findings is that some farmers made negative returns. It is possible that such farmers were not aware of this shortcoming since they kept no records.

Since yield is a variable which could influence returns to management, farmers should be encouraged to plant high yielding varieties of plantain suckers.

Maintenance Expenses Per Hectare Per Annum

The details on the maintenance expenses are contained in Table 9. Maintenance expense is made up of the cost of labour, chemical, fertilizer and equipment. The maximum value obtained was about N22066.67, the minimum, about N606.25 and the mean of N6115.31.

Analyzing the relationship between farm size and annual expenses on maintenance, it was observed that maintenance expenses fell progressively as farm size increases from 0.5ha up to 14.99ha and then rose thereafter up to 17.99ha (Table 10).

Furthermore, a comparison between farm age and maintenance expenses in Table 10 showed that arithmetic maintenance expenses increased progressively from N4511.56 to N6,733.13 as farm age increased up to 16 years, thereafter it fell to N5,701.3 and later rose to N5734.00 as farm age increased progressively to 40 years.

SUMMARY AND CONCLUSION

The study has furnished information on the state of the acts on plantain production in Ondo State, Nigeria.

Plantain framers are ageing, with 51years as the mean, average farm size was about 5 hectares and majority of the farmers entered the industry within the last 15years. Arithmetic, mean per hectare was 3.28tonnes. Arithmetic mean expenses per ha was N5,109.00 and returns to management per year ranged from N109,139.00 which is just above the minimum wage in government establishment to a negative of N13,202.00. Maintenance expenses per ha fell progressively as farm size increased from 0.5 ha up 14.99ha and the rose thereafter up to 17.99ha. The most minimum though was between 12-14.99ha.

There were divergences between rates recommended on one hand and actual field observations on the other hand, on labour utilisation on various operations of plantain cultivation and maintenance; actual field observation values were higher in most cases. Problems faced by the plantain farmers include pest attacks, high price of pest and fertilizers, high cost of labour, low assess to credit among others. Definitely, plantain production can be profitable, moreover, the nutritive value of plantain and the various uses to which it can be put and its implications for sustainable agricultural systems lend support to the need for its production.

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Table 1: Age Distribution of Plantain Farmers in Ondo State 2006/2007

AGE GROUP (YEARS)	NO OF FARMERS	% OF FARMERS
21-30.99	4	1.4
31-40.99	38	13.8
41-50.99	107	38.6
51-60.99	87	31.4
61-70.99	33	11.9
71-80.99	7	2.5
81-90.99	1	0.4
Total	277	100.00

Source: Estimated from the study.

Table 2: Size of farms of plantain farmers in Ondo State, Nigeria. 2006/2007 season.

Farm size (hectares)	Percentage (%)	Cumulative percentage.
0-2.99	28.6	28.6
3.0-5.99	45.7	74.3
6.0-8.99	13.3	87.6
9.0-11.99	8.7	96.3
12.0-14.99	3.5	99.8
>15.0	0.2	100.0
	100.0	

Sources: Estimated from study

Table 3: Size of Farms of Plantain Farmers in Ondo State 2006/2007

Farm size (hectares)	Percentage (%)	Cumulative percentage.
2.0 – 10.0	71.7	71.5
10.1 – 20.0	27.6	99.3
20.1 – 30.0	0.35	99.65
30.1 – 40.0	0.35	100.0
Total	100.0	

Source: Estimated from the study.

Table 4: Years in Business of Plantain Farmers in Ondo State 2006/2007

YEARS IN BUSINESS	NO OF FARMERS	% OF FARMERS
1-5	47	16.9
6-10	33	11.9
11-15	117	42.2
16-20	31	11.2
21-25	34	12.3
26-30	8	2.9
above 30	7	2.5
Total	277	100.00

Source: Estimated from the study.

Table 5: Distribution and Statistics of Yield of Plantain in Tonnes per Hectare per year 2006/2007

Yield group	No of farmers	Percentage of farmers
1.13-2.0	146	52.8
2.1-3.0	21	7.7
3.1-4.0	64	23.1
4.1-5.0	6	2.2
5.1-6.0	9	3.3
6.1-7.0	9	3.3
7.1-8.0	12	4.4
8.1-9.0	-	-
9.1-10.0	3	1.1
above 10.0	6	2.2
Total	277	100.00

Source: Estimated from the study

Table 6: Distribution and Statistics of Replanting Age for Plantain Establishment in Ondo State 2006/2007

Years	Frequency	Percentage
1	7	2.5
2	12	4.3
3	6	2.2
4	27	9.7
5	85	30.7
6	128	46.2
7	2	0.7
8	6	2.2
9	-	-
10	1	0.4
>10	2	0.7
Total	277	100.00

Source: Estimated from the study

Table 7: Distribution of Problems Faced by Plantain Farmers: Ondo State, Nigeria 2006/2007 Season

Problems	Frequency	Percentage
Transportation	228	82.2
Pest, disease and high cost of chemicals	168	60.6
High labour cost	154	55.6
Low access to credit	154	55.6
Problem of land tenure	132	47.6
Poor Storage technology	112	40.4

Source: Estimated from the study

Table 8: Labour Rates in Man-Days per Hectare (Recommended and Practiced Rates)

Operation	Rate Recommended by Federal College of Agric.	Observed Rates as observed from the findings
Under brushing	15	27
Felling trees	1.5	5
Packing and burning	2	5
Lining out/pegging	14	10
Pre-planting spraying against pest	8	10
Dipping suckers in insecticide before planting		
Holing	10	10
Planting	10	15
	7	12

Source: Estimated from the study

Table 9: Farm Size and Maintenance Expenses, Ondo State, Nigeria 2007/2008

Farm size in hectare	0-2.99	3-5.99	6-8.99	9-11.99	12-14.99	15-17.99
Arithmetic mean maintenance expenses per hectare in Naira	9578.71	5745.51	3363.60	2507.83	2212.14	4909.22

Source: Estimated from the study

Table 10: Age of farm as revealed by years of business and Maintenance Expenses, Ondo State, Nigeria 2006/2007

Age of farm as revealed by years in business and maintenance expenses	1-8	9-16	17-24	25-32	33-40
Arithmetic mean maintenance expenses per hectare in Naira	(N)4511.56	(N)6733.13	(N)6208.17	(N)5101.30	(N)5734.00

Source: Estimated from the study

Table 11: Statistics of Total Specified Variables in Plantain Production: Ondo State, Nigeria 2006/2007

	Amount in Naira (N)				
	MIN	MAX	MEAN	MODE	MEDIAN
1. Total Returns/hect of land	1428.00	18348.00	5109	2650	4529
2. Return to management/ha	(13202)	109139	7918	9176	3159
3. Total Expenses/ha	1428	18348	5109	2650	4529
4. Total Cost/tonne	696	19140	2690	2780	1686

Source: Estimated from the study

These calculations exclude those for management.

Received for Publication: 17/03/2009

Accepted for Publication: 15/05/2009

Corresponding Author

J.O. Bifarin

Federal College of Agriculture, Akure. Ondo State, Nigeria